

Proceedings of
Workshop on
“Water Conflicts in Odisha: Issues and Way Forward”
28th and 29th March 2011
Organized by
Odisha State Center,
Forum for Policy Dialogue on Water Conflicts in India
Development Resource & Training Center (DRTC), CYSD, Bhubaneswar

A 2-days Workshop on “Water conflicts in Odisha: Issues and way forward” has been organized during 28th – 29th March, 2011 at Bhubaneswar by ‘Odisha State Centre’ of the ‘Forum for Policy Dialogue on Water Conflicts in India’. Environmental activists, thinkers, academicians, Government Officials, Farmer leaders and Civil Society Organizations from different parts of the state participated in the workshop along with members of the National Steering Committee of Forum to discuss about the ongoing and emerging water conflicts in different geographies of the state. Over six technical sessions’ participants deliberated upon mechanisms for better understanding, resolution and prevention of conflicts and brainstormed options to deal with imminent water crisis in the state.



Inaugural Session

Chairman— Prof. Bibhuti Pattnaik

Chief Guest Prof. Trilochan Pradhan

The inaugural session started with the welcome address by Tapan Padhi. He introduced the chief guest Dr Trilochan Pradhan and Dr. Bibhuti Pattnaik and other dignitaries. Then he requested the participant for brief self introductions. After this formality, K J Joy of SOPPECOM in his introductory remark briefly described the evolution, objectives and contributions of the forum. In his description he informed that the Forum (Forum for Policy Dialogue on Water Conflicts in India) is a very loose network of institutions and individuals, which started five years back, engaging with and trying to understand serious issues of water conflict around the different geographies of India. In the first phase the forum tried to understand the water conflict and started documenting the various issues of water conflict in the country. In the second phase it is engaged to develop different approaches and methodologies towards conflict documentation, resolution and prevention. Apart from working with two state centers at Odisha and Kerala to document and to attempt methodologies for engaging with active conflict, forum has also put together two working groups for taking up studies towards conflict prevention. One group has deliberated on the entitlement and allocation for life, livelihoods and ecosystem, and its report has recently been released by Mr Jairam Ramesh, Minister of Environment and Forest, Govt of India. Another working group has been working on institution, legal aspects related to water and conflict resolution.

He also informed that the forum is regularly guided by a national steering committee and a national advisory committee comprising of activists, academicians and environmentalists, working on water issues in different parts of India. He also touched upon the objective and process of Forum's engagement with Water Conflicts in Odisha, through Baitarani Initiative of Shristi, which subsequently elaborated by Project coordinator of the State Center, Pranab Choudhury.

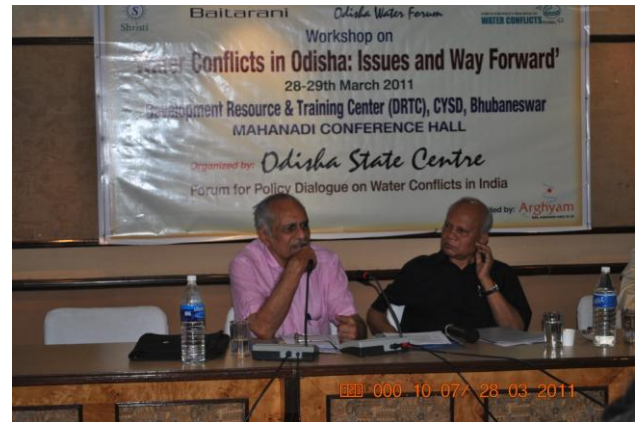


After Joy's introductory remark, Project coordinator of the State Center, Pranab Choudhury, presented about the work of the Forum in the state, objectives and an overall situation of water conflicts across sectors, geographies and basins in the state. There had been a spurt in water conflicts of late, he said, in response to state's development trajectory as a result of increased citizen concerns, media appreciation and political patronizations. Now revolutions around state's rivers have become common and social movements around water are spreading fast with reverberations and linkages with anti-industrialization and displacement campaigns. Informing about the twin objectives of workshop in this backdrop, he briefed about the agenda of sharing and discussion on 27 conflict case studies documented through local resource persons and about the session planned on sharing and discussion around the action research work on engaging with Hirakud water conflict



Thereafter, the chief guest, Padmabibhusana Prof. Trilochan Pradhan, Ex-Vice Chancellor and senior academician highlighted on the need of protection of agricultural land from the construction of bigger dam project and reiterated the need to create more barrages. He also outlined many issues on water conflict and the role of water on the growth of civilization. Again he held that the rivers are nature's tray for water and they carry the socio-cultural and religious sentiment of the people throughout the years. Floods are not bad always, he pointed out. It deposits minerals and other micro-nutrient that helps in agricultural output. He suggested for a comprehensive river mapping system with regular update. Towards the conflict resolution he

said creating awareness is not enough but we need to have pragmatic engagement to solve the ongoing and potential problems.



The inaugural session was presided by the noted odia novelist and socialist Prof. Bibhuti Patnaik who remarked that the growing water conflicts may lead to the Third World War and the present trends indicate the beginning of the process. He cited the example of POSCO, a South Korean steel company, entry of which has led to many violence, disturbances and movements in Odisha. He described Dams with particular reference to Hirakud reservoir are modern temple but such temples are not presided by the deities but by the devils. When dams constructed the most affected are poorer section of people of SCs and STs Communities. He quoted the story of a tribal Sambharu, a dam-displaced who used to work as a labour in the dam construction, as told by a retired engineer from the dam. Sambharu showed his courage and exposed his chest to withstand the force of impounding of water to plug of a difficult leak during dam construction. Later after the completion of dam and flow of its benefits to downstream, the engineer got promotion and was transferred to state capital. There one day, he found a old tribal showing monkey-dance in the public to eke livelihoods, who he could recognize as the same Sambharu. By telling the story, Mr Patnaik, tried to reiterate the cost that the displaced has paid for the dam construction and how it has further dispossessed them, while transferring benefits to handful few.

The inaugural session ended here with the vote of thanks by P R Choudhury.

Technical Session—1
Chairman— Prof. Bibhuti Patnaik
Summary Presentation—Prof. R M Mallick

In the first technical session under the chairmanship of Bibhuti Patnaik, Prof. R.M. Mallick, Steering Committee Member of the State Center and noted Academician, presented a summary of five case studies on 'Conflicts around Drinking water, Ground Water and wetlands and water markets water conflicts'. In the lense of a critical peer reviewer, he provided detail feedback on further improvements in the documentation, while also providing a critical analysis of the conflict contexts and implications for the state.

#	Conflicts	Theme & Location of the Conflict	Manifestation of conflict & Parties	Resource Person
1.	Drinking Water - Fluoride contamination	Fluoride contamination NALCO periphery, Anugul	Protests, media coverage <i>NALCO, Villagers, OPCB</i>	Ashis Das
2.	Water market-access to irrigated water of poor	N Balasore, Bhograi, Jajpur	<i>Rich and Poor farmers, Ground Water Board</i>	Bikash Pati,
3.	Urban Ground Water – shallow wells vs deep bore wells	URBAN GROUND WATER Bhubaneswar	Media coverage <i>Builders, Municipality, Dug well/ shallow tube well dependents</i>	Anurjay Dhal
4.	Wetland	Sara-Puri	Protests, Road blocks, Media Coverage <i>Vedanta University, Admn, Villagers, Activists</i>	Tapan Padhi
5.	Untouchability-access to drinking water	Nuaguda in Rasiguda Panchayat – Khairiput Block	Fights, <i>Different Caste people</i>	Manoranjan Routray



Highlights of the papers discussed by him were as below
Temple city: Groundwater vanishing very fast

- Declining trend of ground water level in Bhubaneswar city.
- Increasing deterioration of drinking water quality due to fast growing urbanization.
- Water loss due to leakage

- The sensitivity of ground water environment
- Rain water harvesting is the remedy to the future water catastrophe

Wetland degradation-Sara Lake

- Sara Lake has reduced to 200-300 square Kms from 1,700 square kms.
- This is due to the repeated hydrological interventions, by the Water Resources Department which reduced this wetland and its functions of flood moderation.
- Decline in the cultivation of summer paddy and fishes
- The Water Resources Department dug a channel from Siaracut to Beladala extending river Dhanua to release the flood water from Sara into the sea. This artificial channel is called Kholanai, a sort of an artificial river. This move facilitated early clearance of water. But at the same time it brought in fundamental changes in the wetland putting it on a fast track of degradation.
- The channelization of water from Sara was aimed at providing relief to the upper reaches, but its impact on lower reaches is alarming as this area frequently affected by flood and the summer paddy is no more grown.
- Diversion of water of two rivers (Bhargavi and kusabhadra) into innocuous Dhanua became a major menace for thousands of people in the downstream.
- The land acquisition by Vedanta University has ignited the already agitating mind of the people who are at the brink of a man made catastrophe.



Groundwater marketing in Balasore

- Ground water depletion
- Neighborhood conflicts
- Absence of legislation to use ground water
- Inequitable distribution of ground water.
- Conflict between rich and marginal farmer
- Practice of water marketing by rich farmer. Water extracted by the shallow tube wells' is sold to the small farmers with a price seems to be very expensive.
- Privatization of ground water is proving disastrous to marginalized farmers and the ground water depletion has rendered conflict among livelihood of small scale farmers and large scale farmers.

Drinking Water and untouchability, Nabrangpur

- Caste conflict over drinking water between Bonda tribe and dalit
- No alternative other than chua for drinking water during summer.

- Limited number of wells and tube well
- Drying out of natural streams due to deforestation.

Water and air pollution in Anugul of Odisha by industrialization

- Fluoride emission by NALCO smelter.
- Land grabbing for industrial expansion
- Loss of fertile lands due to effluent release
- Displacement
- Health Hazards due to air and water contamination
- Silence of Pollution Control Board

In the open discussion, Suhas Paranjape, Prof. Janakrajan, Prof. M K Ramesh, Er Sisir Behera and Bimal Pandia along with the authors of the paper participated meaningfully to the deliberation with their analytical remark and suggestion.

In this discussion Prof. M K Ramesh suggested that the term conflict for these case studies can be replaced as concerns or issues as these papers do not suggest any conflict between various stakeholders but host of issues. Again he raised question on the use of term 'proper legislation' in Bikash Pati's paper as legislation is always proper.



Suhas Paranjape reflected upon the difference between water right and right to water.

Technical Session II

Chairman—Er.Sisir Behera & Prof. Chandan Mahanta

Summary Presentation—Dr. Smita Mishra Panda

The second technical session was chaired by Er. Sisir Behera and co-chaired by Prof Chandan Mahanta of IIT Guwahati. Dr Smita Mishra Panda, state steering committee member of the Forum, presented a summary of seven case studies around conflicts on Mining and Pollution.

#	Conflicts	Theme & Location of the Conflict	Manifestation of conflict & Parties	Resource Person
1.	Bheden – Pollution & river <i>degradation</i>	POLLUTION & LIFE of RIVER Around Jharsuguda	Unrest & protests, interference by Govt, media coverage <i>Villagers, Industries, Govt (OPCB & Dist Admn)</i>	Mehboob Mehtab
2.	Pollution of water due to Mining related activities	MINING & POLLUTION Sukinda	Downstream Villagers, Mining Companies, CPCB	Abinash Das
3.	Brahmani River pollution – Impact on fishery	Pollution- Livelihood Gunudei, Mandar, Chandipala- Dhenkanal	Protests, movements, media coverage Industries, OPCB, Urban bodies, Downstream Fishermen	Sisir Tripathy
4.	Ground water depletion- Coal mining	Depletion of groundwater level Talcher	Protests, media coverage <i>Mining Companies, Ground Water Board, Villagers, OPCB</i>	Santosh Mohanty
5.	Ib – Thermal pollution	Thermal POLLUTION Ib-valley	Industries, OPCB, Villagers in downstream	Bimal Pandia,
6.	Kolab Reservoir – pollution – Industrial affluent	Kolab Reservoir	Protests, tension NALCO, Villagers, Activists	K. Sudhakar Pattanaik
7.	Khandadhar Waterfall degradation by mining	MINING – RIVER LIFE/ LIVELIHOODS	Protests, media coverage <i>Industry, Villagers, Activists</i>	Himanshu Patra

Bheden – Pollution & river degradation

- Bheden – 64 kms – provides for irrigation and domestic use – affected after 2000, when industries (Vedanta, LN Metallics, SMC power generation) started pumping water out.
- Water scarcity and declining quality due to effluents flowing into the river – fluoride, coal dust and ash, impact on agriculture lands
- Top soil also affected, people suffer during the summer months

Pollution of water due to Mining related activities in Sukinda

- Iron ore mining – open cast mines (IMFA) – leaching – contaminating the ground water
- Presence of many industries – Jindal, Visa etc.

- Presence of heavy metals (chromium compounds) in the GW – affects drinking water and health of human beings – TB, Malaria, Leprosy, Gastroenteritis and Cancer
- Air pollution is very common



Brahmani River pollution – Impact on fishery

- Angul-Talcher stretch most polluted – Thermal power station, Heavy Water Project, Nalco Smelter plant, Nalco captive power plant, NTPC, Mahanadi Coalfields – problem started 1994
- Fly ash, oil, grease, heavy metals, Chromium flourides, Phosphoros, acids – flows into Nandira
- Fishing badly affected – 63 villages

Ground water depletion- Coal mining in Talcher area

- Ground water affected due to the industries – MCL, Captive Power Plants, NTPC and thermal power stations – 15 open cast mines
- Scarcity of potable water is the major issue – 200 villages
- GW table has gone down
- Women are the worst sufferers

IB-River pollution

- Intensive coal mining – coal based and water intensive industries
- Underground and open cast mines – affects the fishermen, access to water for domestic use
- Surface water quality affected, Ground Water is vanishing
- People have to depend on the industries for drinking water

Kolab reservoir- Pollution

- River Godavari – Catchment area is 1630 sqkm
- NALCO mining and ore refinery
- Ash and red mud pond – contaminates the reservoir which affects the domestic water – Sunabeda and Damonjodi townships, Jeypore town, affects the cattle population
- Run off affect the paddy fields
- Certain varieties of local fish have also declined

Khandadhar Waterfall degradation by mining

- Proposed mining in the catchment area – iron ore and manganese
- OMC is operating – affecting the quantity & quality
- POSCO is coming – will lead to drying up of streams
- Khadadhar mountain – 52 villages will be affected – Paudi Bhuyan tribals
- 10168.24 ha of agricultural land will be affected

At the end of presentation she suggested authors to take care of the following points.

- Response of the Government
- Response of the Industries
- Are the struggles leading to some positive results?
- Analysis of how policies are being flouted
- Current status of the conflicts and struggles

Following her analytical deliberation of the cases, the papers were openly discussed by the authors present and delegates.



Prof. Janakrajan reflected upon few of his observation. He suggested RTI can provide vital information about the pollution control board’s role in combating pollution. He further said about the need of collecting evidence to make a case for the pollution affected the people. Sripad ask about the role of Comprehensive Pollution Control Index which was followed by the replies of Suhas Parnjpe and M K Ramesh.

Technical session—3
Chairman—Prof M K Ramesh; Co-chair- Er Sreedhar Behera
Summary Presentation- Tapan Padhi

Prof. M K Ramesh of National Law School, Bengaluru chaired the 3rd technical session. Tapan Padhi presented a summary of five case studies around inter-state disputes and river bank erosion. These case studies are

#	Conflicts	Location of the Conflict	Manifestation of conflict & Parties	Resource Person
1	Interstate Dispute- Joura	Joura Nala, Koraput	Media coverage, Inter-state	N N Panigrahi

	Nala - Chhatisgarh		communications <i>GOO & GOC</i>	
2	Inter State Dispute – Barrage on Mahendra Tanaya in AP	Mahendra Tanaya	Protests, Media coverage, Inter-state communication <i>GOO & GOAP</i>	Bighneswar Sahoo
3	Pollavaram conflict	Malakangiri, Odisha		Priyabrata Satapathy
4	Irrigation vs. pisciculture in Rajabandha MIP, Balasore	Balasore	Protests, Meeting between the District administration to solve the conflict	Bikash Pati RCDC
5	Kendrapara – River bank erosion	RIVER BANK EROSION Kendrapara	Protests, Applications to Govt/Politicians, Media coverage <i>Villagers, Water Resources Department, Revenue Department, Sand miners</i>	Bijay Kabi



Interstate Dispute- Joura Nala – Chhatisgarh

- Joura nala is a natural link between the River Indravati and Kolab.
- The State Of Chhattisgarh is proposed to construct a Dam at Joura River. As per water sharing, 40,000 million cft water was allocated to Chhatisgarh, but now it is not available at this River.
- If dam gets constructed, 50 villages in the downstream in Odisha will not get water from this river.

Inter State Dispute – Barrage on Mahendra Tanaya in AP

- If barrage get constructed, Paralakhemundi will not get water. As per Interstate agreement there should be 50:50 sharing. Now Odisha is using only 12%.



Pollavaram conflict

- More than 1.5 lakh people going to be displaced from 276 villages most of them are tribal.
- Nearly 1 lakh acres of forest land going to be submerged.
- There is direct conflict between promoters of project for irrigation, power generation and development of region against affected people opposing the project.
- Environment impact assessment report of 1985 says that 1,57,697 people going to be affected, after this population increases also census data of 2001 does not resemble with ground realities for finding out affected people.
- Public hearing conducted during year 2005 was dominated by local politicians, which resulted into lack of participation of real beneficiaries in public hearings.

Irrigation vs. pisciculture in Rajabandha MIP, Balasore

- The MIP Rajabandha has been an unreliable one for irrigation; people of the locality were trying to get some other utility of the MIP through pisciculture.
- As per the existing policy of Government, three GPs namely Olmara, Makidia and Sardarbandh were making auction of the MIP for pisciculture and that was quite profitable.
- Villagers from West Bengal were regularly fishing in the canal affecting the stake of the auction takers. The process continued for a long period. At last in the year 1999, the conflict took a bigger shape.

Kendrapara – River bank erosion

- Residents of Ostia, Guali, Baranga, Barangkuan villages were hit by the changing of course of Baitarani River near Rajkanika tehsil.
- Unauthorized sand quarrying operation has also led to the severe erosion of several villages under Marshaghai and Mahakalpada tehsils on River Mahanadi downstream.
- River erosion has assumed alarming proportions in the villages of Kodakana, Patalipanka, Purussottampur, Raghunathpur, Ramachandrapur, Chanda and Gadaramita stretched across the Mahanadi deltaic region.
- The river is changing its direction and moving towards the agriculture fields in these villages.
- About 2,000 hectares of crop areas have been submerged.
- The brick-kilns are also causing soil erosion due to continuous digging of earth.

The day's proceedings came to an end with **K J Joy's** eloquent remark on structural change to settle the inter-state dispute. He highlighted three things—

- 1- Constitutional amendment to put water in the concurrent list from present state list.
- 2- How much water should be there in the river after allocation to the states should be monitored
- 3- Who are the medium to monitor?

At the end of the day long proceeding a street play on 'water and unity' organized by folk group '**Natya Chetana**'.

Day- 2

29-03-2011

Special Session on 'Water Conflicts around Hirakud'

Chairman—Prof M K Ramesh

Presenters: Priyabrata and Jinda

Panelists

Lingaraj, Farmer Leader, Paschim Odisha Krishak Sammannaya Samiti

Ashok Pradhan, Farmer Leader, Paschim Odisha Krishak Sammannaya Sangha

Prof Arta Bandhu Mishra, Retd Prof, Sambalpur University

Prof D P Nayak

Gopinath Majhi, Budi Anchal Sangram Samiti

Prof. S. Janakarajan, MIDS, Chennai

Sripad Dharmadhikary, Manthan

Suhas Paranjape, SOPPECOM

The first session of the 2nd day was exclusively centered on the water conflicts around Hirakud, with an eminent panel consisting of farmer and fisher leaders (Lingaraj, Ashok Pradhan and Gopi Majhi) from Hirakud, senior researcher and academician (Prof.Arta Bandhu Mishra and Prof. D P Nayak) from Sambalpur and steering committee members of the forum with rich experience around Cauvery (prof Janakrajan) and Narmada (Sripad) issues.

Pranab introduced the panel member and requested Prof M K Ramesh to chair this important session. Underlining the importance of the Hirakud conflict in the national context, in the light of ongoing debates around neo-liberal industrialization and rights of local communities, Joy highlighted the objective of the action research study and the need of an inclusive process.



Hirakud Conflict Analysis Framework by Priyabrata Satapathy

Joy's introduction was followed by Priyabrata Satapathy of the State centre who presented the Hirakud Conflict Analysis Framework developed by the center and dwelled upon the multiple conflict and complex issues around Hirakud from its catchment to command, from policy and institutional framework to farmer's movement etc. In his presentation Priyabrata highlighted water conflicts in Odisha, need of understanding water conflict, water conflicts around industries and dams, objective of the action research study on water conflicts around Hirakud, conceptual framework of Conflict analysis, present status of conflict around Hirakud, save Hirakud campaign, and the demands of farmer etc.

He pointed out that water conflicts in Odisha are peaking at all levels with crystallization of social and environmental movements, intensification of interstate water dispute and increasing manifestation of conflicts around water use, water excess and water quality. Conflicts, he underlined, are getting exacerbated with increasing demands for water by different users, and coexistence of a variety of uses and users. They are being manifested at different levels: at Societal Level, at State Level and National Level. The specific nature of water as a resource viz. it being divisible and amenable to sharing, a common pool resource, has multiple uses and users etc. also add to conflicts

Conflicts are not necessarily bad, he emphasized, as they point to the need of societal change and call for innovation, restructuring of legal, institutional mechanisms. While violence is a negative manifestation of conflict, cooperation is an inherent opportunity in everything.

With engineering discourse of water storage dominating the water resource management and with water getting increasingly being treated as a commodity and calculated as per the economic benefit, he mentioned that conflicts around dams & barrages are becoming increasingly apparent. Displacement and riparian rights have also been causes of the conflict. Now, in the LPG era, increasing allocation of dam water to industries and resulting impacts on agriculture and apprehensions of farmers are intensifying these conflicts and debates over dams.

In this context, he delineated the objectives of the action research study that the state center has been carrying out around Hirakud, which are to explore and analyze different dimensions of conflict around Hirakud; to Identify and map the stakeholders around the conflicts and to carryout stakeholder analysis; to outreach and raise awareness through working with civil society institutions including farmers' organizations



and adopting right dissemination approach; to organize stakeholder dialogues around the conflict; to explore conflict resolution and to influence policies for proactive conflict prevention

Dwelling on the conflict around Hirakud reservoir, he shared about the reducing inflow into the reservoir due to increasing industrialization in Chhatisgarh and more upstream abstraction (48 No of industries withdrawing app 1036 MCM/Year of water); about increasing allocation to industries from the reservoir and about the changing reservoir operation/water allocation and rule curve along with opinions of experts regarding its effect on power generation, drinking water supply and delta irrigation.

He then outlined the farmers' demand to cancel all the MoUs with the industries to allocate water from the Hirakud reservoir; to use the water for irrigation purpose for Rengali and Lakhanpur Block; to protect the interest of fishermen communities by controlling pollution in the reservoir; to give permanent ownership on land (Extra acquired land for 630-632 RL) to the Oustees; to take legal action against the polluting miners and Ib Thermal Power Station, to take stringent action against Bhusan Power and Steel Co. who is withdrawing water from Bheden without due permission and polluting the River by releasing the toxic effluents; to irrigate the agricultural lands of Lakhanpur Block by constructing MIPs on Hitsankelo, Jamunala, Ahira, Sarasatia, Kuilari, Bagadia and Lelher streams flowing through this Block; to develop the existed lift irrigation points and MIPS, renovate the canal system for irrigation; to discuss with Chhattisgarh Government on the injudicious allocation of water to the industries and to ban the proposed privatization of surface and ground water as proposed to be materialized from 01-04-2012 by the Water Resource Department, Odisha and ADB.

He then presented the Hirakud Conflict Analysis Framework developed by the state center to comprehensively look at the water conflicts around Hirakud, holistically and historically. For the purpose of information collection and to study about all aspects of Hirakud Dam, first this framework tries to look at three dam-geographies, 1) Catchment 2) Reservoir and 3) Command. In Catchment the inflow quality and quantity, in Reservoir the storage, reservoir management and rehabilitation and in Command the water management, conveyance efficiency, Delta irrigation etc are being researched in detail, going down upto issue levels, following the problem-tree approach. Also, the policy/institutional changes (viz. rule curves, committees to look at allocation etc.) and the stakeholder's (farmers' movements, protests etc.) influence are being studied to better comprehend and analyze the issues, conflicts.

While concluding his presentation, he emphasized the need of appreciating the Hirakud conflict, by going beyond only 'Industry Vs Agriculture' to accommodate other complex issues and conflicts related to equity and justice. There are many intra-sectoral and inter-sectoral water conflicts around Hirakud Water. In the neoliberalized economy, Hirakud also presents classical contestations over natural resources in fast-developing countries between neoliberal economy pushing market and reforms and local communities struggling to maintain their livelihoods and institutions. The situation exemplifies the global debates around water and environmental justice. There is a need of comprehensive and holistic appreciation of these complex issues by the stakeholders to develop 'convergence spaces' for strengthening alternate discourses and for contributing towards conflict resolution mechanisms.



Stake holder analysis with detail elaboration of situation in Sasan canal command by Jinda Sandbhor

This presentation was followed by *Stake holder analysis with detail elaboration of situation in Sasan canal command* by Jinda Sandbhor of Odisha State Center. Jinda's presentation started with an introduction to the genesis and early period of water conflicts around Hirakud and agitations during conflict peak period 2005-07. Underlining the diversities of water conflicts around Hirakud reservoir, he went on to explain the need of stakeholder analysis in post peak period of conflict. Towards this, he outlined the objectives of the study to identify and understand stakeholder perspectives; to analyze specific issues and local factors related to conflict; to map and classify stakeholder; to understand positions, linkages, interest and power relations related to conflict and to suggest possible policy intervention. He was forthcoming in delineating the limitations of study, which was limited, as per its scope to Sason command, for Farmer group information collection and to reservoir peripheral areas, for industrial and fishery related information collection. Other limitations were due to qualitative nature of the study based perceptions analysis and limitation of number & type of stakeholders consulted.

The methodology used included qualitative analysis, diversity of conflicts and combination of methodologies, stakeholder table and list, stakeholder sociogram, actor linkage matrix and stakeholder value analysis etc.

Sharing the findings of his study, Jinda explained about different perceptions of farmers, water resources departments, industries, fishermen and other stakeholders about Hirakud conflict, which varied from lack of water in Sason command during June 2005 to head-tail inequity, water use inefficiency, limited irrigation infrastructure, pollution etc.

He then went on to explain the water Conflicts typologies that emerged from the stakeholders' perceptions, were around Inter sectoral (Industries Vs Agriculture, Industries Vs Fishermen, Industries Vs Water resource Department and Interstate issues) and Intra sectoral (Head area Vs Tail area, Fishermen Vs Illegal fishery, Pani Panchayat Vs village institutions)

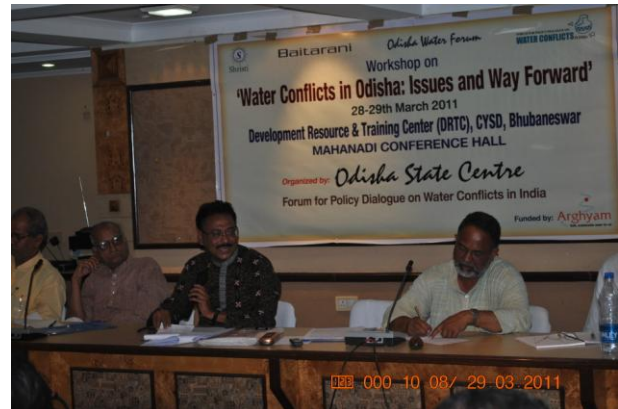
The study, he pointed out, has delineated several issues in Sason command which are linked to the conflict. Those include change in size of ayacut, continuous flood irrigation and water logging in *Bahal* lands, changing cropping pattern, lack of attention to irrigation potential of traditional water bodies, water governance and helpless Pani Panchayats, cross bonding and insecure kharif irrigation, irrigation infrastructure, land consolidation and failure in irrigation management etc. Farming in the command area, has been fraught with

mono cropping, distress sale of paddy, marginalization of Land oustee, more frequent drought situation, farmer suicide cases, water logging, soil acidity and decrease in productivity etc..

Concluding his presentation, Jinda outlined the issues that need further attention which were formation of alliances among stakeholders groups, reservoir sedimentation and gradual decrease in live storage, vulnerability among farmer groups, Hirakud and its impression on region, impact of powerful stakeholders on priorities related to reservoir, gradual increase in industrial water intake and impact of Industries in the socio-economy, geo-politics, ecology of the region, quality based conflicts around reservoir etc.

Panel Discussion

In the following panel discussion, many less debated and highlighted issues and conflicts around Hirakud were deliberated and opinions about the process to be adopted for the study were expressed. While there was a consensus on complexity and plurality of water conflicts around Hirakud with increasing dispossession of farmers', fishers', and poor, there were different opinions regarding the need and process of attempting conflict resolution.



In the panel discussion **Lingaraj Pradhan** outlined the historical and current background of conflict around Hirakud reservoir. He said conflict has risen since 2006 due to large water intake by industries which resulting in shortage of water for agricultural requirement. There is command area problem around Sasan canal. Industries are not concerned with the problems of farmer. Government holds that there is enough water for industries. For Govt, industries are above the farmers. Another concern is that a large number of MoUs have been signed by the government blindly with the industries without measuring the water and sediment content in the reservoir. Again conflict resolution mechanism is not very convincing. There is no hope of conflict resolution but intensification of conflict as the govt playing double standard with the farmer to protect the industries. Presently the govt has adopted two strategies. The first is the canal repairing and the second is the cutting off of hydroelectricity production from 57% to 17%. But he said these measures by the govt have only can give short term relief but in long run it would intensify the conflict.

Another panelist **Ashok Pradhan** in a very statistical way presented his description on Sasan canal problems of Hirakud. He described whenever there was less than 630 ft water in the dam the problems have occurred. Such situation has occurred 28 times since the establishment of dam. Siltation is another area of concern.

Sasan canal is not modernized till 2002. Its renovation started only during 2002. During this time the entire Rabi cropping was stopped.



The next panelist **Prof. Artabandhu Mishra** outlined about 10 fundamental concerns over Hirakud water issue.

First, he said it would be wrong to treat water as a resource. When we use the word resource we are commodifying the water as commercial goods. Second point was on water experts' reports. He was critical of the importance accorded to reports from the World Bank, or American report or European report, while wisdoms and scriptures from Upanishads and Vedas regarding water (salilam sarvaidam) are often ignored. In the 3rd point he considered Hirakud as a 57 years old mother of and expecting her to continue lactation at this age seems far fetching. His implication was to treat Hirakud as outdated and dying structure. Fourth point he remarked that Hirakud dam not only did create conflicts, but also resulted destruction of forest, microclimate of the area, devastated agricultural land, devastated fisheries, degraded land and water quality etc. It has also brought in deltaic destabilization and coastal erosion. Fifth, it has created dependence on the system/infrastructure. His sixth point was that conflict cannot be resolve, it can be prevented. Seventh, there are people in charge of conflict promotion for political goal. So be aware of conflict promotion agent. Eighth, he suggested to have some mechanism to protect the life of our whistle blower. His ninth advice was to recycle, reduce and reuse our water resource. There is riparian degradation of 10 thousand river basins. We should culture the water harvesting system. Tenth point highlighted the necessity of a good consultant.

The next panelist, **Gopinath Majhi** described how the fishery was affected due to contamination. Going back to 30 yrs there was only two industries—Birla and Tata and they were taking water from a Nala. When Hirakud dam project started 26,500 families were displaced. Initially Hirakud water was not allowed to any body at that time. There was water but not to quench the thirst. Now numbers of stakeholders are bee lining around the reservoir. After the loss of land people compel to choose fishery as their occupation. Pisciculture has been affected due water contamination. After agitation by Prasanna Panda, Govt created co-operative societies and divided the reservoir into 6 sectors. There are 5 cooperative societies operating now. But in 2004, new reservoir fishing policy on fishing has changed the entire set up. Now the condition of fishermen is quite grim. Then he appealed the intellectuals to help in influencing pro-poor policy by the state.

Prof. D P Nayak said the Project was made for flood control, other uses are byproducts. He predicted that conflict would now spread over to Boudh, Sonepur, Balangir from Sambalpur. Puri, Bhubneswar and Cuttack are also to be affected. In these days hydroelectricity has gone down by allocating the water to industries. Water supply will be affected in various cities. Average rainfall has gone down. Water level is decreasing. Delta formation has been started inside the reservoir. Sasan canal will cease to function and the conflict is going to be perennial. To get rid of these problems he suggested number of measures—ask every factory to draw as much as water possible during monsoon and store it, purify it and use it. Renovate all traditional water harvesting structure in the command area of Hirakud.



Prof. Janakrajan suggested understanding the underlying issues and a need of thorough analysis. There should be a mindset, mental preparedness of various stakeholders for negotiation. Pragmatic thinking towards the solution required. Conflict should not be taken as a negative concept. Negative energy requires to be converted to positive energy. At last he emphasized conflict exist because of potential problem and it required pragmatic solution.

According to **Sripad**, problem requires to be solved not the conflict. Kisan and industry cannot resolve the conflict by sitting together. We need to distinguish between reasonable and unreasonable issues. Issues need to be identified first and then unreasonable ones could be discarded. Again conflict resolution should not be a compromise, rather should be settled with equity and justice. All stakeholders cannot be treated equally. Because stakeholders consist of both, victims and privileged. It is not right to take side of any one stakeholder. He suggested to focus also on quality, which seemed to be not paid attention. Finally he suggested development should be distributed to the entire sector.

Tapan Padhi suggested modernizing the cropping pattern. He also raised caution about lack of flood cushion in Hirakud. Modern technology should be applied to reduce the conflict.

Prof. Chandan Mahanta said the life of the reservoir is reducing. There is need to look for possible future trajectories. Conflict can be solved through negotiation. Water foot printings of industries need to be analyzed, documented and widely disseminated and debated. CSR funds of Industries can be utilized develop and augment own water structures. .

Suhas emphasized on creating and validating the knowledge system.

Technical session—4

Chairman—Prof Janakrajan; Co Chair: Er Singhsamant

Summary presentation – Pranab R Choudhury

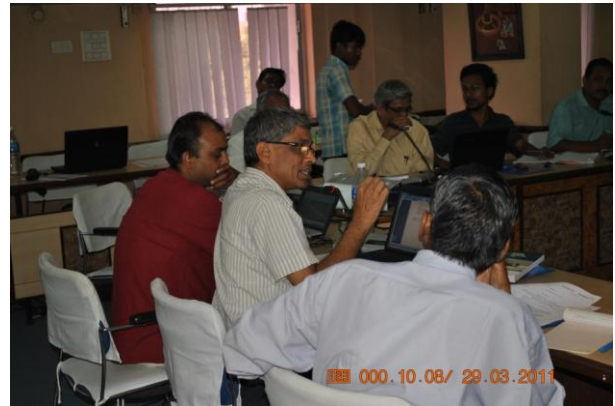
Pranab presented the summary of five case studies on conflicts around “River management: Dams, Barrages, Escapes and River linking” in the final technical session which was chaired by Prof. Janakrajan and co-chaired by Er. Singhsamant

#	Conflicts	Location of the Conflict	Manifestation of conflict & Parties	Resource Person
1	Kanupur barrage and related conflict	Basudevpur, Keonjhar	Media coverage <i>Industries, Water Resources Department, Villagers</i>	Kiran Sankar Sahu
2	Anandpur Barrage	Anandpur, Keonjhar	Media Coverage, Protests by KCF <i>WRD, KCF, Villagers</i>	Kiran Sankar Sahu
3	Indrāvati and livelihood conflict	Indravati, Nabarangpur	Protests; <i>Power Project Vs Farmers</i>	N N Panigrahi
4	Dam and displacement- Lower Suktel	DAM & DISPLACEMENT Magurabeda Village, Bolangir	Protests, court cases, movement <i>Activists, Affected peoples, To-be-benefited farmers, Political Parties & Govt</i>	Sanjay Mishra
5	Drainage conflict, Baitarani	FLOOD & DRAINAGE Jajpur	Protests by villagers, application to politicians and Dist Admn <i>Upstream Vs Downstream Villagers, Water Resources Department</i>	Bamadev Padhi
6	Upstream and downstream impact	Semiliguda	Fights <i>Upstream Vs Downstream Villagers</i>	K.Sudhakar Pattanaik

Indrāvati and livelihood conflict

- Combined reservoir by damming Indravati and its 3 tributaries Kapur, Podagada , and Muran made the downstream prone to drought
- 105 Villages affected; No EIA of d/s impact
- Initially 1.72 lakh acres in Kalahandi & 1.3 lakh acres in Koraput was planned to be irrigated; but during inauguration, it was told that 3.00 lakhs acres of shall be irrigated during Kharif and 2.4 lakhs acre in Rabi, all in Kalahandi
- lower Indravati project as promised never came up take care of d/s

- EIA in 1994 indicated d/s impacts and predicted inter-state conflict; suggestions have not been implemented instead of demands/protests by d/s community
- Announcement by PM to construct 4 med irrigation project; only one 15% complete
- Violation of multiple legal frameworks – Bachawat Commission, OWP, riparian right, Hazra committee recommendation
- **Stakeholders** : D/s Farmers, dam authorities, riparian communities



Kanupur barrage and related conflict

- Highly awaited & much delayed project – appear to be deliberate
- Planned to irrigate 48,000 Acres of cultivable land of 2 Lakh farmers in 238 villages, now 3 water guzzling industries will be diverting huge amount of water
- Piped Slurry Projects : Essar, Jindal & BRPL allocated about 12 cumec of water u/s of reservoir ; 10 more on line ; lean season could be very difficult
- Jindal is laying a nine-kilometer pipeline to draw water from soon-to-be-completed Kanupur dam project; Without permission pipeline of two feet in dia have been now laid along a stretch of 4.5 km
- No canal work started for Irrigation (fund released to complete by Dec 10); but pipelines have been already laid
- Tailing ponds of Mining and Slurry Units located near to river bank adding fine solid waste & slime – silting up channel and reservoir very fast
- **Stakeholders:** Industries, farmer from command region, Kendujhar citizen forum and dam authorities.

Water logging in KELUA BADA GENGUTI DELTA

- Sana Genguti, Ransala, Sagadia and some small rivulets flow through the region and drain to Bada Genguti River, which doesn't have embankment on left side (on right side embankment is there)
- Vast stretch of land is water logged over 18000 acres due to lack of drainage
- Water logging has created vast mars and bog in the delta area which results in loss of fertility and productivity along with the loss of pasture and other livelihoods problems.
- Problem started with construction of NH 5A in 1960s; aggravated further with construction of K26 embankment on right side of river

- In spite of TAC recommendation no left embankment ; but construction of Test Relief Embankments and Sluice gates adding to woes; drainage further hampered
- Deliberate and artificial breaches in rainy season adding to inter-village conflict
- **Stakeholders** : Farmers from submerged area, government authorities, riparian villages

Lower Suktel Project

- People want irrigation- Bolangir very less area under Irrigation
- Project would submerge an area of 5216 hectares; 16 villages fully and 10 partly.; render around 14380 people of 4160 families homeless.
- To be displaced villagers (18) are in confrontations with the administration
- Project delayed
- Conflict over compensation, over displacement; between supporter and those who oppose In 2005, there was direct conflict between dam opponents and government functionaries at the time of spillway inauguration. The clashes resulted into Lathicharge, injuring protesting people and policemen.
- After that, the PAP under Lower Suktel Budi Anchal Sangrami Parishad held a meeting at Gadsankar Dunguripali & planned future course of action to halt the project work.
- 30 village with 75000 people oppose the project, they almost scare the CM away when he went to lay the foundation
- Threat perceptions over rehabilitation, ecological loss, water to BALCO in future
- **Stakeholders** : Affected villages, Dam authorities, Budi anchal sangrami parishad opposing the dam and Atragami yubak sangha supporting the dam

Mali parbat (Down stream and Upstream)

- Villagers of u/s Mugundaguda & d/s Tentuliguda villages had fought over access to water, when u/s villagers put an embankment to meet their scarcity 4 years back
- Later resolved with intervention of BDO, who helped construction of a WHS for the d/s village
- Now the conflict is around taking over of Maliparbat by Hindalco for bauxite mining

Anandpur Barrage for irrigation

- Perceived conflict of interest as felt by KCF
- Location of Anandpur barrage on Baitarani River is not located at a advantageous to people of Keonjhar.
- Benefit to Balasore & Bhadrak more
- Right & Left canal will irrigate mostly urban areas
- Progress and the projected dates of completion are far from reality, political expediency demands creation of such false hopes among the farmers.
- **Stakeholders** : Farmers from upstream of barrage, farmer from command region, Barrage authorities and Kendujhar citizen forum

Conflict Manifestation

- Indravati

- Raising of the issue by MLA in assembly 1994 and before Rehabilitation Advisory Committee. But no body took seriously. Also filed a PIL, which was countered by state; PM promised benefits to appease d/s community
- Genguti delta
 - Protest to construct left embankment ; Genguti Sagadia sangram Samiti
- Suktel
 - In 2005 police lathi charge ; 50 injured out of which two later succumbed to injuries. 24 policemen also received injuries; CM chased away ; MLA warned of disaster consequence if road works to project start without land acquisition & compensation; In 2009 December, villagers of four villages protested the road construction for the project
- Anandpur
 - Dissatisfaction & unrest
 - Conflict trajectory

Source/Trigger of Conflict

- Indravati : Inner-basin Diversion of water ; no action for d/s water resource augmentation, high points –protest, unrest , simmering continue
- Kanupur : Delay in taking off, allocation to industry, non-laying off canal
- Lower Suktel : delay, inauguration events, compensation
- Mali parbat : Stopping the flow
- Anandpur : No such triggers

What they Indicate?

- Indravati :
 - Myopic Engineering - Historical Blunder; Political appeasement at the cost of voiceless tribal; Hydro -Power at the cost of d/s irrigation
- Kanupur
 - Corporate appeasement at the cost of longstanding irrigation demand; Accumulation by dispossession ;Larger issues of who and how will own and manage the natural resources – implication on sustainability & equity
- Genguti delta
 - Classical case of adding up mistakes →Political and engineering decoction; embankments and roads messing up drainage
- Suktel
 - Conflict between supporter and opposition ; politicization; Better compensation can be lucrative

Learning for Conflict Study – Policy Context

- Why Projects meant for irrigation usually getting delayed, with cost escalation touching sky?
- And when materializing, there are industries sitting pretty to take a share?
- Is this trend by default or design? or does it confirm the theory of “accumulation by dispossession” over water use in Orissa?

Suggestions towards resolution

- Indravati

- No dialogue; implementation of Hazra committee recommendations; construction of 4 medium projects
- Kanupur
 - Govt should reveal the allocation plan, explains the delay; lay canals and prioritize irrigation; Better EMP and effective implementation; Water harvesting by Mining/Industries
- Genguti
 - Proper (?) management of rivers and rivulets to meet the local situation and need; Construction of left embankment, parallel embankments and sluices on rivulets, better sluice gate mgt for drainage, draining canals
- Suktel
 - Serious and rigorous dialogue with the Budianchal sangram parishad and a better compensation package in line with POSCO
- Anandpur
 - Shifted to another site can irrigate 15,000 hectare land; **Green and Clean Hydro power** , drawing water and 'Head' from a barrage at Bhimkund

Improving the Paper

- **General Remarks**
 - Adding legal frameworks; Documenting and Linking Contexts – Causal Connection
- **Specific Remarks**
 - Indravati : Conflict history, legal contexts, stakeholders' involvements and analysis well articulated; can be made more compact
 - Kanupur : Conflict history and legal contexts
 - Genguti : Conflict not very well articulated; more facts and figures required
 - Lower Suktel : Conflict chronology and processes articulated, need to be fastened up
 - Maliparbat : need to be rewritten around water conflict

Panel Discussion

Chairman—K J Joy

Panelists – Prof Smita M Panda, Er SinghSamath, Adv Bibhu Tripathy, Suhas Paranjape

A panel discussion on “Water Conflict and Odisha’s Water future” was the final and the concluding session which was chaired by Mr.Joy. In this session many solution measures were discussed elaborately on future water crisis in Odisha by panel members Smita Mishra Panda, Professor, HDF School of Management, Er. Singamant, EX-EIC, Bibhu Tripathy, Advocate and Suhas Paranjpe, SOPPECOM, Pune.

Professor Smita Mishra Panda quoting the recommendations of Odisha Environment Congress, outlined the followings for addressing water conflicts in Odisha

- Technological institutions, individual and social issues to be considered simultaneously for the holistic management of water conflicts.
- Ensuring water security for the vulnerable groups.
- Integrated and decentralized water management.

- Develop river policy considering basin as the management unit.
- Efficient uses of water by water harvesting recycle and reuse.
- Adopting captive water storage at macro and micro level.
- Gender and cultural aspect of water management need to be emphasized



On solution of water conflict in Odisha, Prof.M K Ramesh suggested a few measures. They are

- Developing a catalogue of interest.
- Two parts can be explored. One is the avoidance part and other is reformative. In avoidance part sufficient safeguard should be provided for the violation of interests. Right to information can be utilized for any kind of violation. Negotiative settlement should be explored. In the reformative part there should have a relief mechanism to minimize the disaster of any kind.

Adv Bibhu Tripathy pointed out that 'to identify the issue' is to resolve it. He also asked for the future plan and policy of Government to resolve the conflicts.

Prof. Janakrajan said that not nobody is against the development as it gives everybody comfort. But unsustainable development is not acceptable. Development, which is not sustainable, breeds conflict.



Commenting on Suhas Paranjpe's views on "Water Conflict and Odisha's Water future" Prof. Chandan Mahanta reiterated that conflict has to be looked at in a dynamic context. Conflict is not static as the society

is subject to change, has been changing and going to be changed. Therefore some forms of conflicts are inevitable. Engaging with the conflict does not require fighting conflict but to manage the conflict. We should learn to live with the conflict and we also have to manage to conflict. He further said that development is an unavoidable fact of modern life and the process of development certainly brings some sort of damages in the natural resources. Certain sacrifice is unavoidable in this process. This is a trade off. But what is not acceptable is unsustainable development. When the development is no more sustainable conflicts arises. In this context Prof. Mahanta proposed:-

Let us fight for sustainable development.

Let us fight for managing conflicts instead of fighting conflict.

Let us see the development percolating to everybody.

Towards the winding up of the workshop, KJ Joy said that lots of points and learning has taken place in the workshop and thanked the entire participants for making the workshop worthwhile. He requested to all the participants to stay connected with the forum and contribute valuably as we all constitute this forum.



Pranab in his summarizing remark about the further actions on conflict documentation mentioned that these conflict case studies would hereafter undergo final round of language and other basic contents editing by the state center. After this, as discussed during the workshop, a set of 2-3 case studies would be sent to steering members of the Forum, who have expressed their willingness, for peer review, apart from the reviewing of other case studies by the Peer Review Panel. Moreover, as the technical sessions were planned, a summary chapter each on different typologies of conflict with macro and theoretical perspectives would also be attempted by these reviewers to provide an analytical and policy insight into these conflicts. Similarly an introductory chapter would also be planned to provide context and a broad overview. It was expected that the editing and reviewing process would be finalized by May-June and the edited volume would be ready July for publication.

The two days long meeting came to an end with the vote of thanks by Pranab Choudhury.